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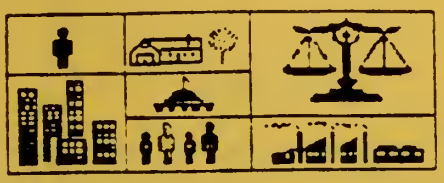

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The Special Commission on Tax Reform

MEASURE FOR MEASURE:

EVALUATING MASSACHUSETTS REVENUE BURDENS

by

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May 1988

SUMMARY

On March 15, 1988, the Joint Committee on Taxation of the Massachusetts Legislature heard, in two separate pieces of testimony, that Massachusetts ranks 3rd highest and 49th lowest among all states in its taxation of corporations. Which of these "tax facts" is true? Both. The truth is, tax measures can be used to support conflicting arguments.

This paper explains and discusses the strengths and weaknesses of the most commonly used tax and revenue burden measures. Data are presented with respect to Massachusetts' total state and local revenue burden, as well as the tax burdens faced by individuals and corporations. Massachusetts burdens are also compared to the U.S. average and to tax burdens imposed by competitor states. In addition, the paper considers studies that construct "representative revenue systems," and which compare tax burdens of "representative households" and "representative firms." A final section explores how Massachusetts ranks in terms of expenditures.

Taken as a whole, the data show Massachusetts' revenue system to be very competitive both nationally and among the states with which we compete for sales, labor markets, and product development. The analysis, however, urges caution. Some tax measures are really not very informative while others can be misleading if not properly understood or considered in context. While tax measures have a place in tax policy debate, they, alone, should not determine the direction in which those policies should move.

US AND MASSACHUSETTS TAX AND REVENUE BURDENS COMPARED, FY86

	US AVERAGE	MASSACHUSETTS AVERAGE	MASSACHUSETTS RANKING
TOTAL STATE AND LOCAL OWN SOURCE REVENUE BURDEN			
1. As a % of personal income	16.0%	15.1%	34
2. Per capita	$2191	$2462	10
STATE AND LOCAL PERSONAL INCOME TAX BURDEN			
1. As a % of personal income	2.2%	3.8%	4
2. Per capita	$280	$620	4
STATE AND LOCAL PROPERTY TAX BURDEN			
1. As a % of personal income	3.4%	3.7%	20
2. Per capita	$463	$601	12
STATE AND LOCAL SALES TAX BURDEN			
1. As a % of personal income	2.7%	1.8%	42
2. Per capita	$376	$295	34
CORPORATE INCOME TAXATION			
1. As a % of personal income	0.6%	1.1%	3
2. Taxes with an initial impact on business	31.0%	21.5%	49

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INTRODUCTION

Policy makers, as well as the public, are frequently barraged with statistics purporting to reveal how the Massachusetts' revenue system compares with other states and how the tax burden it imposes on residents and business has changed over time. Tax rates are the most visible indicators of tax liability, but, while it is relatively simple to compare tax rates among states, rates do not necessarily shed any light on tax burden. States apply their tax rates to different bases and allow different exemptions, credits and deductions, all of which substantially affect actual tax liability. For example, Massachusetts levies a relatively high corporate excise rate, but in 1985 one-third of all firms doing business in Massachusetts paid $228--the minimum corporate excise tax. While the Commonwealth has a high sales tax rate, the actual sales tax burden it imposes is far below the average of other states because it exempts all services and a great many goods from taxation.

Since rates are not very revealing, fiscal analysts have developed a multitude of other measures of tax burden. These measures, however, often appear to be inconsistent and supportive of opposite conclusions as to whether and to what extent the Massachusetts revenue system is competitive with other states.

Confusion over what the measures tell us arises, in part, because tax measures are not always comparable: while each may tell us something about the Massachusetts tax system, they are not always measuring the same thing. In addition, some commonly used tax measures are misleading. They do not really give us useful information about either the fairness of our revenue system or how our revenue system compares to other states, often because they only look at one aspect of the revenue system without taking into account the larger picture. And in almost all cases, tax measures tell us nothing about the extent to which our tax dollars provide services that residents and businesses need or want nor how the level of services provided in Massachusetts compares to other states.

Tax burden measures are used to support differing political positions regarding proper tax policy. The purpose of this report is not to settle the debate, but to add some clarity by presenting the commonly used tax measures, along with an analysis of their strengths and weaknesses. The data are based on research conducted by the Commission, supplemented by other sources which are noted in Appendix A.

I. TOTAL STATE AND LOCAL REVENUE BURDEN

A. Total State and Local Own Source Revenue

Total state and local revenue burden is often cited, but not always in consistent ways. Some measures count as revenue all funds collected and received by the state and local governments, including all taxes, fees and charges as well as federal funds

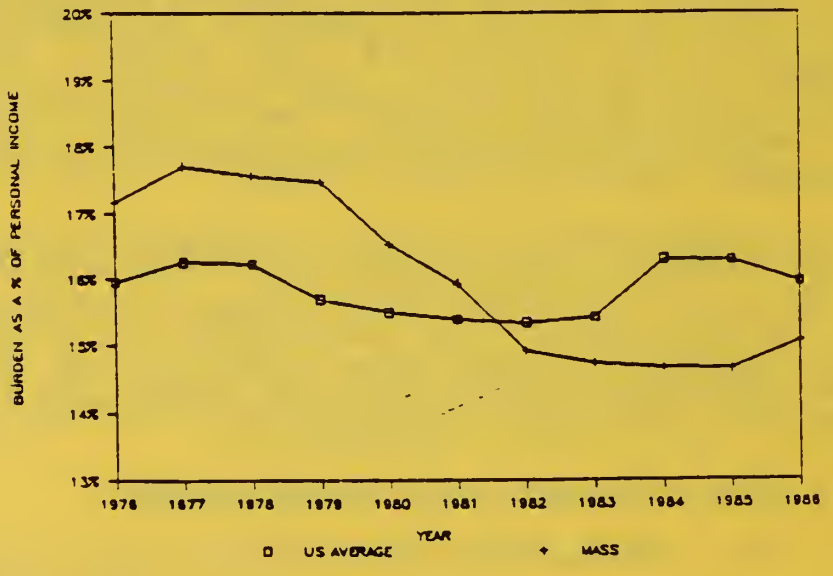
and locally generated) revenue. Some measures compute the burden on a "per capita" basis (that is, total revenue collected divided by population), while other measures calculate burden by comparing revenues to the total personal income of the residents of the state. The variety of ways to show "revenue burden" gives rise to a variety of results.

1. Measured as a percent of personal income

State and local own source revenue measured as a percent of personal income compares the total taxes, fees and charges collected by the state and by the local governments to the total personal income of Massachusetts residents. Federal revenues are not included. Relating state and local revenues to personal income provides some measure of residents' collective ability to pay.

According to this measure, in FY86, the revenue burden on Massachusetts' residents is among the lowest third in the nation: Massachusetts ranks 34th out of the 50 states. The burden is lower than the average of the industrial and "high tech" states, and less than 1% higher than the average of neighboring states (for a list of these competitor states see Appendix B). The graph below shows that Massachusetts' state and local own source revenue burden has fallen significantly in recent years, from 17.7% in FY77 to 14.6% in FY85, and has risen somewhat to 15.1% in FY86. In FY77, we were 8.8% above the U.S. average, but in FY86, we were 5.6% below the national average.

GRAPH 1
TOTAL STATE AND LOCAL OWN SOURCE REVENUE
AS A PERCENT OF PERSONAL INCOME
FY76 - FY86

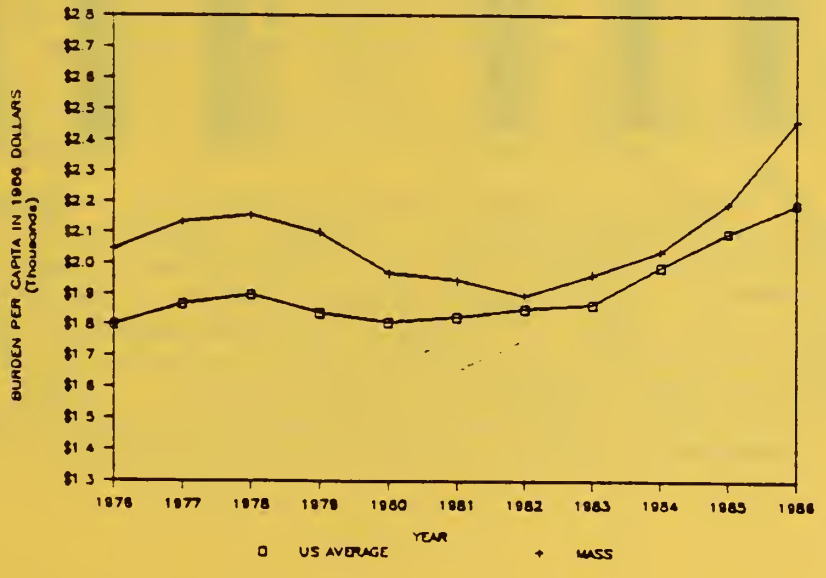


Although this measure does relate revenues collected to ability to pay, it does not reveal how the revenue burden is distributed among households of different incomes. It is, moreover, a somewhat crude measure of ability to pay in that it does not account for wealth or for the degree to which nonresidents bear the burden of Massachusetts taxes. Nonetheless, since these two factors are very difficult to quantify, this measure remains the best indicator of total revenue burden when residents' collective ability to pay is to be considered.

2. Measured per capita

Another commonly cited measure of overall burden is state and local own source revenues per capita. This measure is the average revenue contribution per resident in the state. Southern states, such as Mississippi and Arkansas, rank among the lowest, while northeast and industrial states like New York and New Jersey rank among the highest according to this indicator. The Commonwealth's state and local revenue burden per capita was somewhat above the national average in FY82 through FY84, but the gap has been increasing in recent years. As of FY86, Massachusetts ranked 10th among all states, higher than the average for its competitor states and 12.3% above the U.S. average.

GRAPH 2
TOTAL STATE AND LOCAL OWN SOURCE REVENUE PER CAPITA
FY76 - FY86



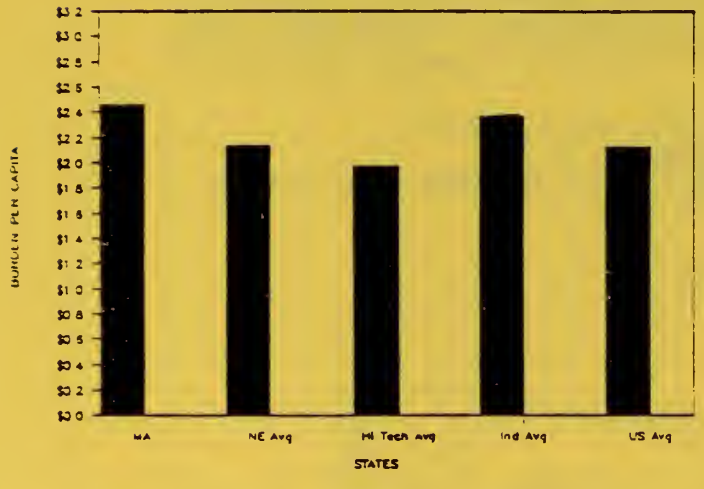
B. Comparison of State and Local Revenue Burden Measures

It is not surprising that state and local own source revenues have risen in recent years. Massachusetts' per capita personal income has been increasing more rapidly than the U.S. average since the late 1970's and in 1985, Massachusetts had the 4th highest per capita statewide personal income. All else being equal, tax collections grow in response to a growth in personal income. Yet while the per capita total state and local revenue burden has grown, Massachusetts residents are being taxed significantly less per dollar of income relative to the U.S. average and less than the average of the Commonwealth's competitor states. As illustrated by comparing the two graphs below, the variation in per capita burden among those states generally considered our closest competitors virtually disappears when revenue burden is measured as a percent of personal income.

GRAPH 3

TOTAL STATE AND LOCAL OWN SOURCE REVENUE PER CAPITA

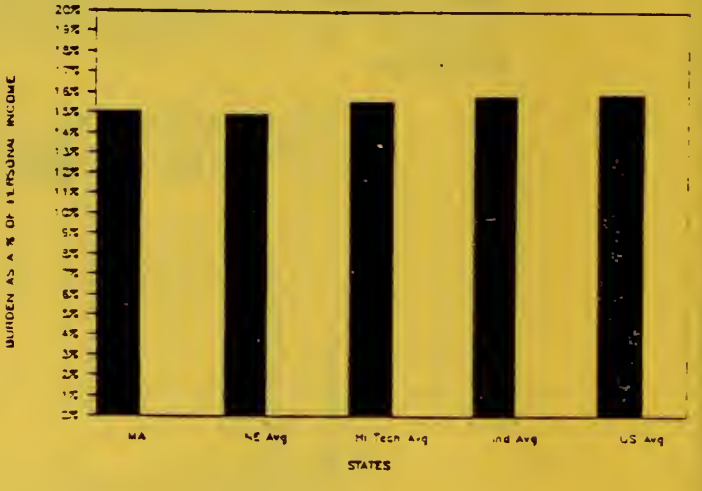
SELECTED STATES, FY86



GRAPH 4

TOTAL STATE AND LOCAL OWN SOURCE REVENUE AS A PERCENT OF PERSONAL INCOME

SELECTED STATES, FY86



The per capita measure allows for a tax paid per person comparison across states. Proponents of this measure contend that it is preferable to the income measure because they believe that changes in public sector growth should keep pace with population growth, not with income growth or with the state of the economy.

Measuring revenue burden per capita, however, does not reveal anything about how much taxes residents, at least collectively, can afford to pay. Ultimately, a revenue system must be capable of being supported by the incomes of the residents of the taxing jurisdiction, and fiscal analysts generally agree that a good revenue system must account for its taxpayers' ability to pay. As such, the tax burden measure which compares revenue to income and thereby takes ability to pay into account is considered by many to be a superior method of analyzing total revenue burden.

C. Representative Revenue System Approach

Each year the Advisory Commission on Intergovernmental Relations (ACIR) computes a yardstick measure of state and local governments' efforts to raise revenues relative to their ability. The measure is considered "representative" because it applies national averages of commonly used taxes and charges to each state's tax base. Capacities differ only because states have differing tax bases

In FY85, the most recent year for which the measure was calculated, Massachusetts' revenue capacity (i.e., its ability to collect revenue) was ranked 10th highest in the nation. Massachusetts ranked 29th in ACIR's measure of effort--the degree to which states utilize their revenue capacity--calculated by dividing the amount of revenues actually collected by revenue capacity. Massachusetts' effort is less than the national average and is also less then its capacity, meaning that the state is using its revenue system less than a "representative state" would.

The ACIR's revenue capacity measure is based on the current average of all states' rates. To the extent that these averages represent sound tax policy, the ACIR representative revenue system approach provides useful comparisons. Massachusetts' high ranking in revenue capacity results in large part from the fact that the ACIR measures are sensitive to changes in statewide personal income. Massachusetts revenue capacity has exceeded its effort recently in part because state personal income increases have exceeded national average increases.

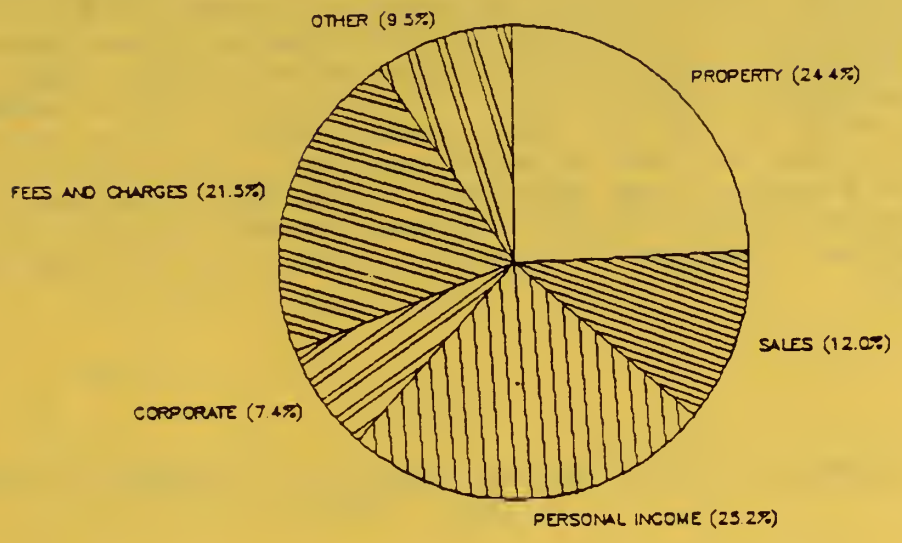
II. REVENUE BURDEN ON INDIVIDUALS

In addition to looking at the average revenue burden for all of the state and local taxes and fees and charges collected, both the income measure and the per capita measure are commonly used with respect to each of the major taxes paid directly by individuals: income, sales and property. The tax burden measures as applied to these individual taxes will be examined separately below.

An examination of the revenue burden of the specific taxes can be misleading, however, unless a state's particular "revenue mix" is taken into account. As the pie charts on the next page reveal, the Commonwealth's tax mix is significantly different from the national average. Massachusetts relies much more heavily on the personal income tax, somewhat more heavily on property taxes and much less heavily on the sales tax and on fees and charges than do other states. States may chose certain revenue mixes to reflect broader tax policy. A heavier reliance on income tax rather than the sales tax, property tax, or user fees and charges in general represents a more equitable way of raising taxes from its residents. The choices made by a state in terms of its revenue mix will necessarily affect how the state compares to other states in terms of the revenue burden of a particular tax.

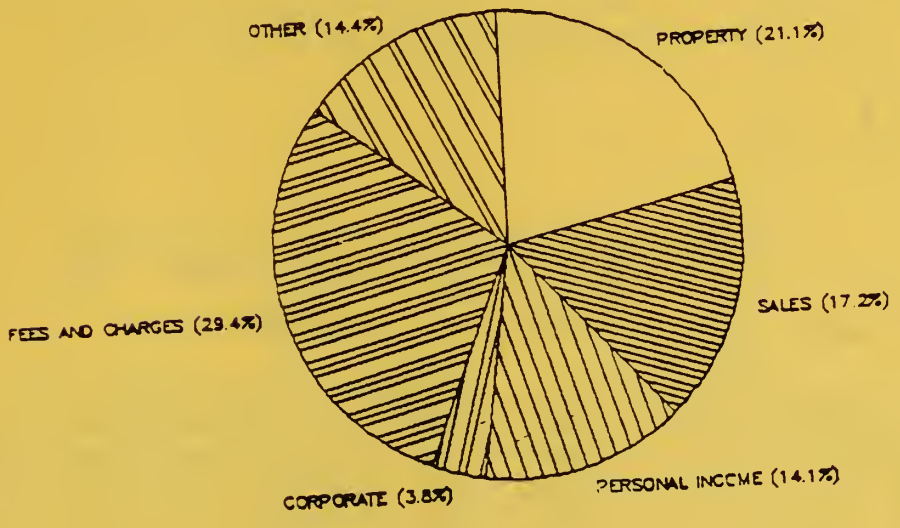
GRAPH 5

MASSACHUSETTS STATE AND LOCAL OWN SOURCE REVENUE MIX
FY86



GRAPH 6

U.S. AVERAGE STATE AND LOCAL OWN SOURCE REVENUE MIX
FY86



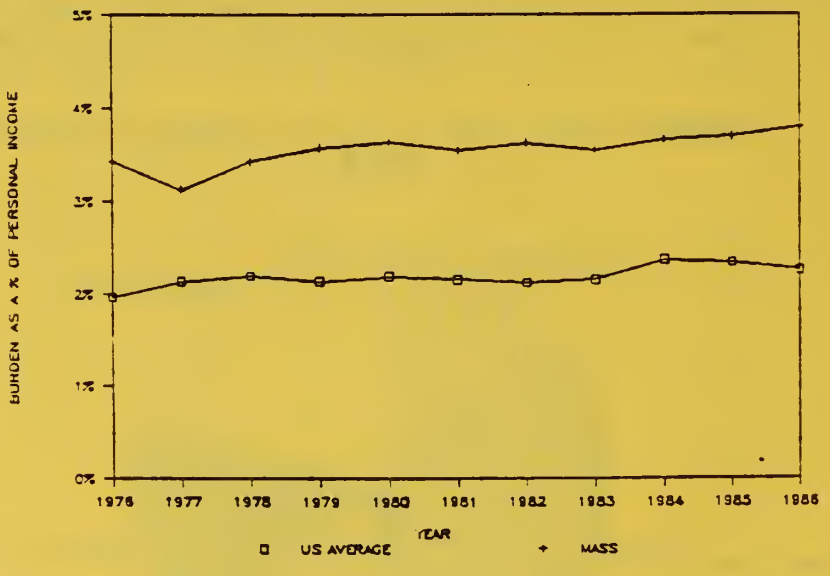
A. The Personal Income Tax

1. Measured as a percent of personal income

In FY86, Massachusetts' personal income tax revenues constituted 3.8% of statewide income compared to a national average of 2.2%. According to this measure, Massachusetts ranks fourth highest among the 44 states with an income tax, below New York, Delaware, and Maryland. Its relative high ranking among states reflects the fact that Massachusetts relies more heavily on the income tax than on other sources of revenues as compared to other states. Over time, the relationship between the Massachusetts and the U.S. average personal income tax burden measured as a percent of personal income has remained relatively constant.

GRAPH 7

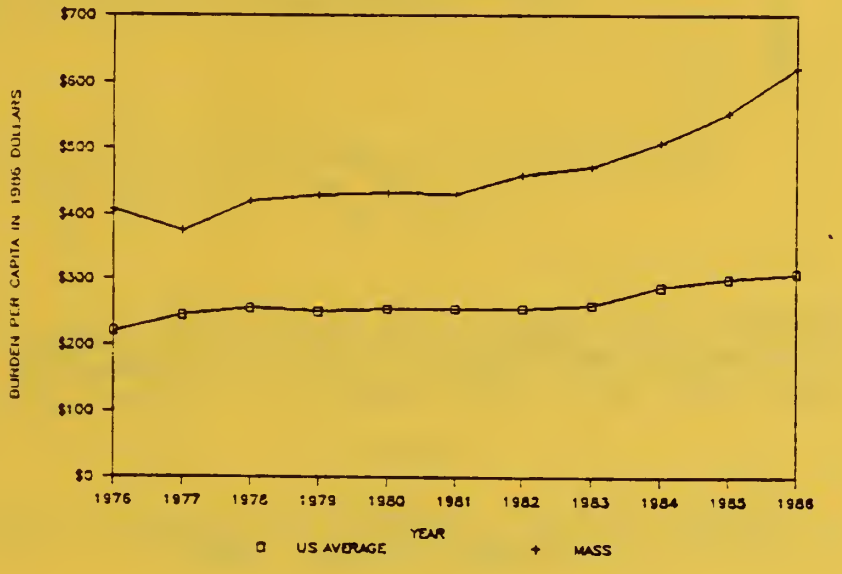
PERSONAL INCOME TAX AS A PERCENT OF PERSONAL INCOME
FY76 - FY86



2. Measured per capita

When the Massachusetts income tax is measured according to population, it ranks fourth nationally, below New York, Delaware and New Jersey. The graph below indicates the relationship of this measure of the Massachusetts income tax to the U.S. average over time, and shows a relatively constant relationship until FY84, when the gap between Massachusetts and the U.S. average widened.

GRAPH 8
PERSONAL INCOME TAX PER CAPITA
FY76 - FY86



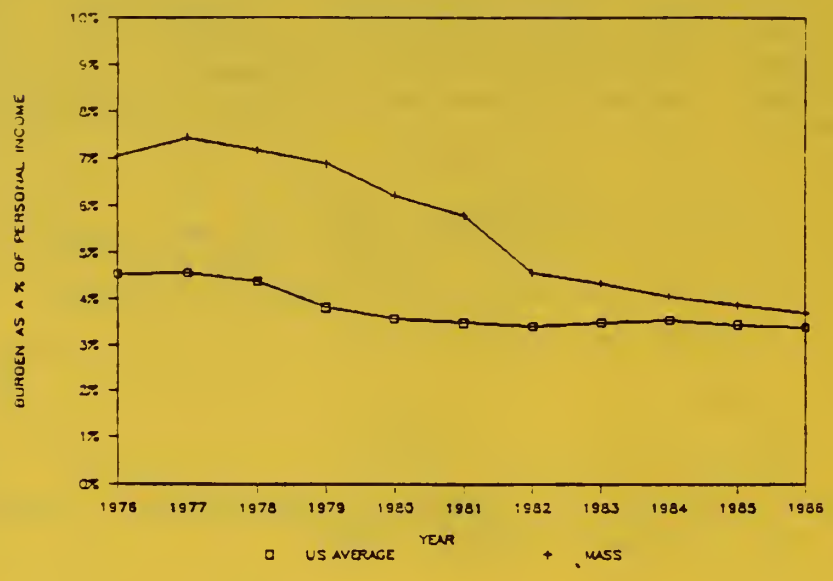
B. The Property Tax

1. Measured as a percent of personal income

As illustrated in Graph 9 on the following page, in FY77 property taxes comprised 7.4% of statewide personal income, placing Massachusetts over 60% higher than the US average burden according to this measure. The Commonwealth's reliance on the property tax has decreased dramatically since then. This fact, coupled with the equally dramatic rise in personal income has meant that Massachusetts' ranking in terms of property taxes as a percent of personal income has been halved over the past 10 years. At 3.7% of statewide personal income, however, it is somewhat above the national average of 3.4%.

GRAPH 9

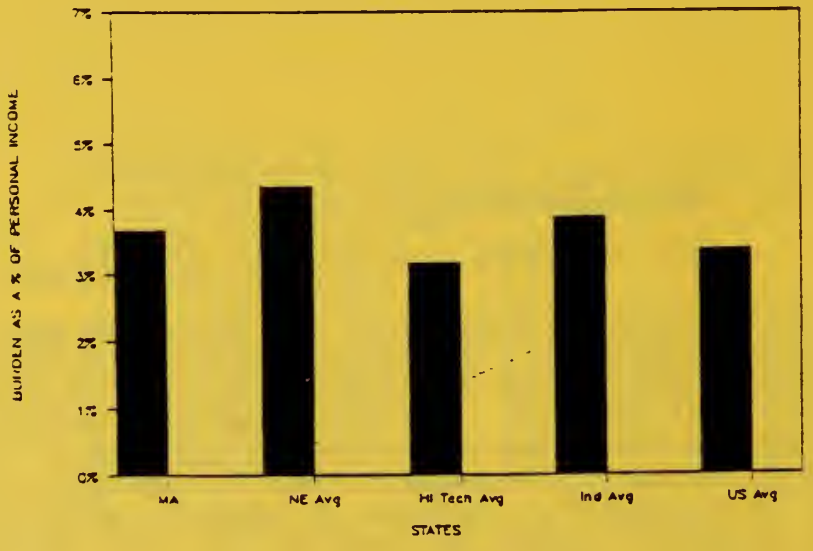
PROPERTY TAX AS A PERCENT OF PERSONAL INCOME
FY76 - FY86



As of FY86, the Commonwealth ranks 20th according to this measure of property tax burden, below the average of our neighboring states and of our industrial competitor states.

GRAPH 10

PROPERTY TAX AS A PERCENT OF PERSONAL INCOME
SELECTED STATES, FY86

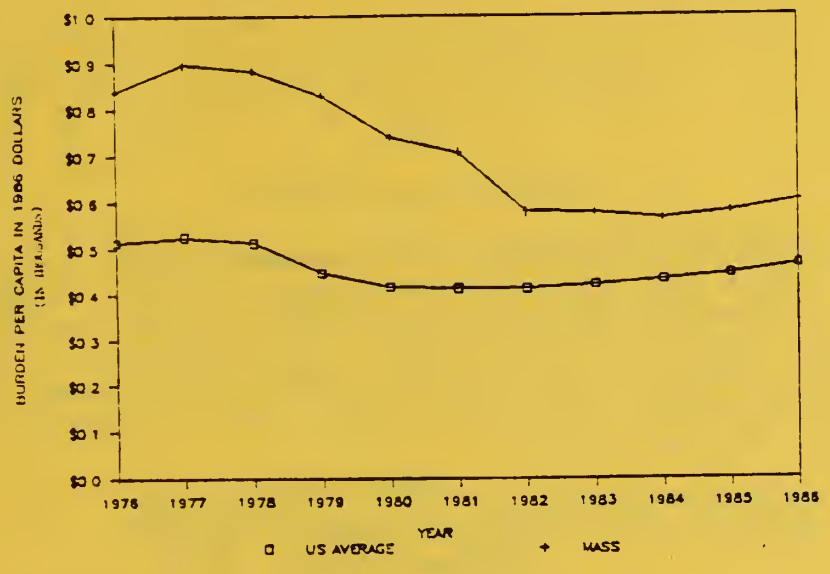


2. Measured per capita

When property taxes are measured on a per capita basis instead of as a percent of personal income, Massachusetts' national ranking rises to 12, although it is much closer to the U.S. average than it was in FY77. The property tax revenue burden according to this measure has decreased significantly since FY77, but not nearly as dramatically as indicated by the income measure.

GRAPH 11

PROPERTY TAXES PER CAPITA
FY76 - FY86



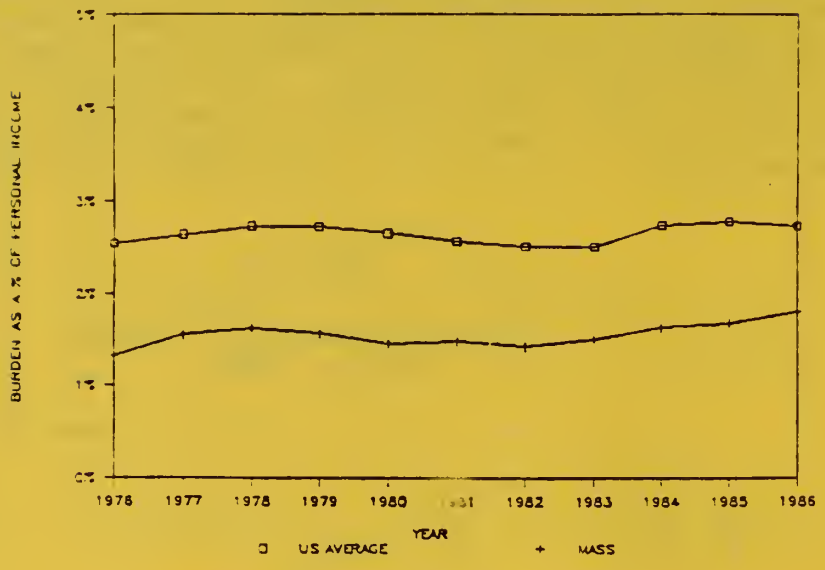
C. Sales Tax

1. Measured as a percent of personal income

In contrast to income and property taxes, Massachusetts relies on sales tax less than almost all other states that have a broad based sales tax. When total sales tax revenue is compared to personal income, Massachusetts ranks 42nd among the 45 states with a broad based sales tax, lower than the average of all the competitor states.

GRAPH 12

SALES TAX AS A PERCENT OF PERSONAL INCOME
FY76 - FY86

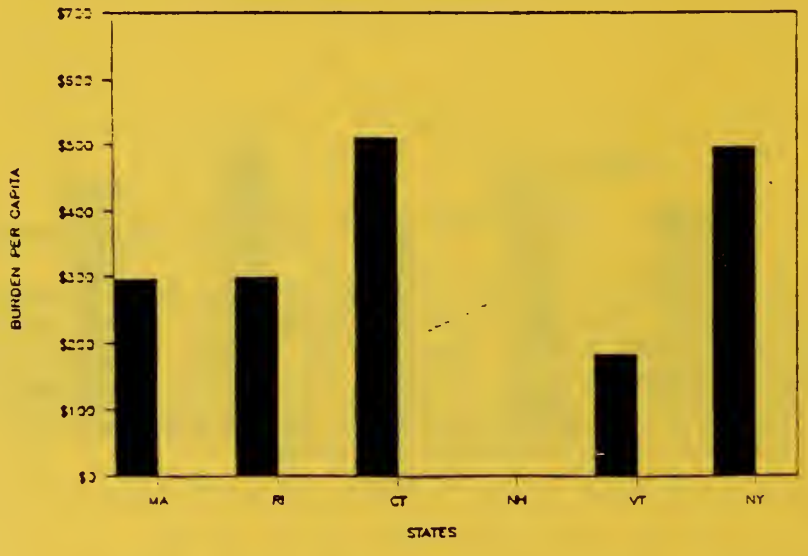


2. Measured per capita

At $295.16 per person, the Massachusetts' sales tax burden measured on a per capita basis places it 34th lowest in the nation. Massachusetts residents, on average, pay 22% less in sales tax than the national per capita average of $376.27 and below the average of all of its competitor states. Graph 13 depicts per capita sales tax burden for Massachusetts and the bordering states in FY86.

GRAPH 13

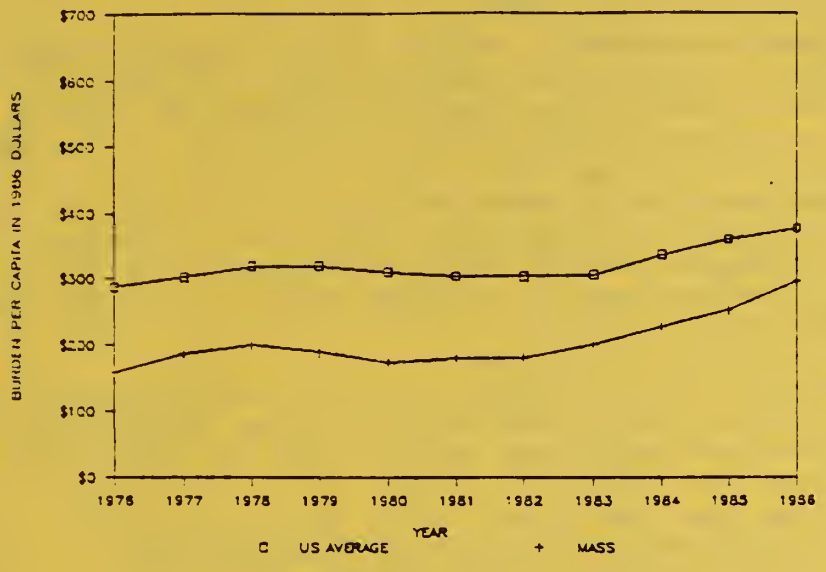
SALES TAX PER CAPITA
SELECTED STATES, FY86



The Massachusetts sales tax burden measured on a per capita basis has remained well below the U.S. average sales tax burden over the last ten years, although the gap has narrowed somewhat since FY83.

GRAPH 14

SALES TAX PER CAPITA
FY76 - FY86



D. The Combined Burden of Personal Taxes: The Representative Household Approach

Measuring tax burdens separately for the income, sales and property taxes has limited value. A state like Massachusetts which relies heavily on income taxes but less on sales taxes will necessarily rank high in terms of income tax burden but low in terms of sales tax burden. If states are to be compared with respect to the revenue burden they impose on their residents, then differences in their revenue mix must be accounted for. The "representative household" approach attempts to address this issue by creating fictitious representative households, with different family incomes, and determining their total tax liability in different locations around the country.

The District of Columbia has performed a recent study of this nature, based on 1986 data, comparing the tax liabilities of households with $20,000, $35,000, $50,000, $75,000 and $100,000 incomes in the District of Columbia and a major city from each of the fifty states, including Boston. Calculations of tax burden are based on personal income taxes, property taxes, sales taxes and automobile taxes.

According to the representative household approach, Boston ranks below the average of the 51 cities in the $20,000, $35,000 and $50,000 income categories, and slightly above the average in the $75,000 and $100,000 income categories, demonstrating that, overall, taxes paid by Massachusetts residents are highly competitive with those imposed by other states.

III. BUSINESS TAXES

There is probably no more hotly debated taxation topic in this state than whether Massachusetts is competitive with other states in terms of the taxes it imposes on business. Although there is great interest in this question, it is quite difficult to accurately assess the impact of state and local taxation on business principally because there is no general agreement as to who actually bears the burden of (i.e., ultimately pays) business taxes: owners (in the form of reduced return on investment), workers (in the form of reduced wages), or consumers (in the form of increased prices).

Despite the unresolved issue of who actually pays the taxes imposed on business, comparisons among states in terms of business tax burdens are often cited as indicators of whether businesses are likely to locate in a particular state. While some argue that relatively high state and local tax bills for business will deter businesses from locating or expanding in a state, most analysts agree that state and local taxes are not significant factors in business location decisions. The quality of public schools, highways, mass transportation, and other public services paid for with tax revenues have been found to be much more important determinants of such decisions.

Because of the unsettled or at least still-argued questions, as well as other issues specific to the traditional measures of tax burdens, the commonly cited tax burden measures as applied to business taxes are not very informative and can be quite misleading. These measures, along with the results of a new way of looking at the competitiveness issue, a representative firm analysis which examines rates of return, are discussed below.

A. Corporate Income Taxes as a Percent of Personal Income

This measure compares total revenues from the tax or taxes a state imposes on corporate income to a state's average personal income. According to this measure, Massachusetts ranks 3rd highest in the nation, higher than the average burden of Massachusetts' competitor states.

Although this measure parallels the tax burden measures used for nonbusiness taxes, it is not a useful measure of corporate tax burden for several reasons. First, it cannot distinguish between states that impose relatively high tax liabilities on

corporations and those which may not tax individual corporations heavily but which have a great deal of corporate activity. Since most states would prefer to have a high level of corporate activity, it is wrong to assume that a high rating on this business revenue measure is necessarily a bad thing.

Second, it makes little sense to measure the corporate income tax burden as a percent of personal income perhaps unless it is assumed that workers actually bear the burden of the tax. To the extent that owners or consumers (many of whom are likely to be nonresidents) bear the burden, using statewide personal income as part of the measure is inappropriate. A measure which compared the corporate tax burden to corporate income would be more appropriate, but the data are not available.

Finally, the corporate income tax is but one of many taxes most states impose on business. Unless all taxes paid by business (such as sales and property taxes) are taken into account, the picture is incomplete. A state which relies less heavily on corporate income taxes relative to the sales tax, for example, might appear by this measure to be more favorable to business than a state which imposes the same overall tax liability on business, but which collects a greater share of its payments from business through the corporate excise tax than through the sales tax.

B. Corporate Income Taxes as a Percent of State and Local Own Source Revenues

This measure compares the extent to which a state relies on the corporate income tax relative to other state and local sources of revenue. Massachusetts' reliance on the corporate excise places it considerably above the U.S. average (7.4% of total revenues compared to the national average of 3.5%).

A state's ranking according to this measure simply reflects one aspect of its revenue mix. (Massachusetts' revenue mix, as compared to the U.S. average, is discussed on pp. 6-7). Like the corporate tax income measure already discussed, focusing on one rather than all taxes paid by business presents an incomplete picture of the state and local tax burden on business and how that burden compares across states.

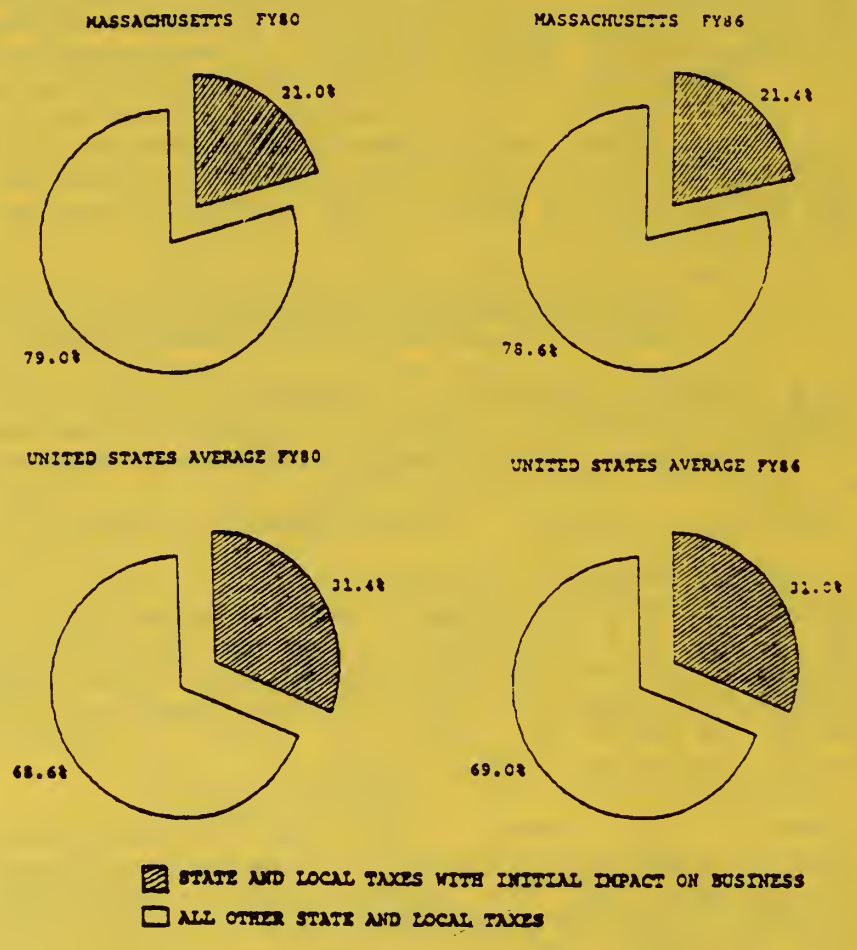
Moreover, this measure, like the one discussed above, cannot discriminate between states which have high corporate tax revenues because they tax business heavily and those which have high corporate tax revenues because they have a high level of corporate activity. Finally, like the measure discussed in Part C below, this measure compares corporate income taxes to total state and local own source revenues, and, as such, rankings according to this measure will be affected by a states' nonbusiness revenue collections.

C. Taxes with an Initial Impact on Business

The Advisory Commission on Intergovernmental Relations' (ACIR) measure of "taxes with an initial impact on business" looks at all of the state and local taxes, fees and charges imposed on business, measured as a percent of total state and local own source revenue. When all the taxes with an initial impact on business are totalled according to ACIR's methodology, the Commonwealth's rank is dramatically reversed--to 49th, 31% lower than the U.S. average.

GRAPH 15

STATE AND LOCAL TAXES WITH IMPACT ON BUSINESS
MASSACHUSETTS AND U.S. AVERAGE COMPARED



The ACIR measure indicates that 21.47% of the total Massachusetts state and local own source revenues for FY86 came from taxes, fees and charges paid by business, essentially the same percentage as in FY80 (21.0%). During the same time, the national average dropped slightly from 31.4% in FY80 to 31.0% in

FY86. According to this measure, Massachusetts taxes its businesses less than all 17 of its competitor states.

However, this too may be an inaccurate measure of business tax burden because it depends on the mix of taxes a state uses and its overall revenue collections. A state with low or even no personal income, sales, or property taxation could have very low overall revenue collections. Although it might rank high according to the ACIR measure because a large percentage of its revenues might come from busineses, its businesses might actually be paying a lower percentage of their income in taxes than would be true if they were located in other states.

D. The Representative Firm Approach

The measures discussed above illustrate how different indicators of business tax burden have their shortcomings and lead to radically different results, adding to the uncertainty rather than resolving the debate. In light of the limitations inherent in the commonly used measures of business tax burden, the Commission employed a new method for evaluating tax competitiveness that compares after-tax rates of return across states.

The Commission's measure is called the "representative firm" approach. It measures the effect that taxes have on the rate of return that certain hypothetical businesses could expect to experience under the different tax systems of different jurisdictions, both in and out of state. Using an original sophisticated economic model, a Commission researcher created six fictitious firms to represent six areas of the state's manufacturing industries and studied how each would be taxed in different locations both in Massachusetts and in some of our principal competitor states.

The study reveals that there was very little difference in after-tax rates of return of manufacturing firms among all the sites; the only possible exception was Texas, which has no corporate income tax. The differences were so small that it was virtually impossible to choose a best or worst site on the basis of tax burden rates. In fact, there was no significant difference in the rate of return produced in the six locations studied than in a hypothetical state which had no state or local taxes.

The Commission's study avoids the shortcomings of commonly cited measures and offers certain advantages. It is not hampered by current limitations on data on business profits and difficulties identifying taxes with an initial impact on business. It can compare a revenue system's impact on profits across states, and by evaluating after-tax rates of return and focusing on the "bottom line"--the influence of taxes on profits over the long-run, the business person's perspective is taken into account.

IV. COMPARING STATE EXPENDITURES

No matter how "accurate" a tax burden measure might be, these measures do not reveal the other side of the revenue picture: how states compare in terms of their public expenditures for the services they offer residents and businesses. Whether Massachusetts spends "too much" or "too little" on public programs generally or on any public program in particular is beyond the scope of the Commission's work. Nonetheless, how Masschusetts compares to other states in terms of its total expenditures is relevant to evaluating our revenue system.

As with the tax burden measures discussed above, expenditure measures are calculated as a percentage of personal income and on a per capita basis. And, as with the tax burden measures, the income and the per capita expenditure measures produce different results.

When total expenditures, excluding payments to the federal government, are compared to statewide personal income, Massachusetts ranks 40th, well below the national average and below the average for industrial, high tech and neighboring states. On a per capita basis, Massachusetts' ranking for direct expenditures rises to 10th, above, but close to the average for the industrial states, and well above the national average and the averages of the high tech and neighboring states.

A comparison of these two expenditure rankings demonstrates that while Massachusetts' expenditures are high given the size of its population, they are low when compared to its residents' average personal income and their collective ability to afford the services and programs funded by these expenditures.

V. CONCLUSION

With respect to nonbusiness taxes, the data reveal that when the principle of ability to pay is considered, Massachusetts is highly competitive in terms of the total revenue burden placed on its residents by the state and by local governments. On average, Massachusetts' residents are paying a lower percentage of their income in taxes than they did ten years ago, and significantly less than the average paid by residents of all fifty states. In contrast, when per capita measures are used to calculate burden, Massachusetts appears to be significantly less competitive. According to ACIR's representative revenue system analysis, Massachusetts' abilty to raise revenues exceeds its revenue-raising efforts, and its "tax effort" is below the national median.

With respect to business taxes, by some measures, Massachusetts has a high business tax burden and by other measures a low business tax burden. However, all of the commonly cited business tax measures have severe limitations. Most

significantly, according to the revenue burden measure which discloses the most about economic decisions and relative burdens across states--the representative firm approach, Massachusetts is highly competitive.

Thus, according to the most revealing measures, residents and businesses in Massachusetts are not overly burdened by taxes and charges relative to other states generally and to competitor states, in particular. These results should encourage the tax debate to move beyond arguments over how Massachusetts "measures up" to discussions concerning more substantive aspects of tax policy such as the distribution of tax burden among tax payers and the appropriate mix of state revenue sources.

APPENDIX A: NOTES ON DATA SOURCES

Data Sources

The Table in the Summary and data for graphs 1-14 contained in this report are from information collected and published by the U.S. Department of Commerce, Bureau of the Census, Government Finance (GF) Series; Government Finances, State Government Finances and State Government Tax Collections, various years.

Graph 15 is calculated from data in the above mentioned sources. The original measure was developed by the Advisory Commission on Intergovernmental Relations. The 1980 numbers are from Andy Reschovsky, et. al. State Tax Policy: Evaluating the Issues. Joint Center for Urban Studies of MIT and Harvard University, 1982. Data for 1986 were compiled by Dr. Robert Tannenwald.

Information from the "representative revenue system" on page 5 is from Measuring State Fiscal Capacity, 1987, by the Advisory Commission on Intergovernmental Relations, December 1987.

Information on the "representative household" discussed on pages 13-14 is from Tax Rates and Tax Burdens in the District of Columbia: A Nationwide Comparison by the Department of Finance and Revenue, Government of the District of Columbia, 1987.

The "representative firm" approach and findings are described in detail in the Special Commission on Tax Reform's report entitled The Competitiveness of the Massachusetts Tax System by Stephen Brooks, et. al. (Eighth Interim Report, House No. 5148, January 1987).

Many of the graphs presented here are updated from the Special Commission's first interim report The Burden and Composition of Massachusetts' Revenue System by James Wooster and Robert Tannenwald (House No. 6352 October, 1986). For further discussion of tax measures see also Robert Tannenwald, "Rating Massachusetts' Tax Competitiveness," New England Economic Review, Nov-Dec 1987, pp. 33-45.

A Note on State Personal Income

Statewide personal income as used in this report is the sum of all income received by the residents of the state. It is the sum of wages and salaries, profits, rent, interest and dividend income, and transfer payments less contributions for social insurance.

Statewide personal income figures as recorded in the publications cited above are for the calender year, rather than the fiscal year. For example, the measure of sales tax as a percent of personal income for FY86 is calculated by dividing the 1986 fiscal year collections of sales tax by the statewide personal income for calendar year 1985.

Resources on the Impact of Taxation on Business Decisions

The following three articles provide excellent summaries of the current literature on the impact of state taxes on business decisions.

State of New York Legislative Commission on the Modernization and Simplification of Tax Administration and the Tax Law, Interstate Business Locational Decisions and the Effect of the State's Tax Structure on the After-Tax Rates-of-Return of Manufacturing Firms, December 31, 1984.

Larry C. Ledebur and William W. Hamilton, "The Failure of Tax Concessions as Economic Development Incentives" in Reforming State Tax Systems edited by Steven Gold, National Conference of State Legislatures, 1986, pp. 101-118.

Dennis O. Grady, "State Economic Development Incentives: Why Do States Compete?" State and Local Government Review. Fall 1987 pp. 86-94.

APPENDIX B: THE COMPETITOR STATES

Some industry representatives have identified three types of states that Massachusetts' businesses compete with in sales, labor markets, and product development. They are listed below.

Neighboring states	Industrial states	High Technology states
Connecticut	Illinois	Arizona
Maine	Michigan	California
New Hampshire	New Jersey	Maryland
Rhode Island	New York	North Carolina
Vermont	Ohio	Texas
	Pennsylvania	Washington